The Impact of E-commerce and Social Media Personalized Recommendations on Consumer Behavior in the Digital Era from the Perspective of Behavioral Economics

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Abstract: With the digitization of consumption methods, consumers' consumption psychology will also be affected, thereby affecting their final consumption behavior. E-commerce and personalized recommendations on social media in the digital era are two important influencing factors. Therefore, studying how these two factors affect consumers' consumption concepts and behaviors through behavioral economics has theoretical and practical significance. Existing research mostly analyzes consumers' choices when making online purchases from the perspective of behavioral economics, or how a single social media platform affects consumer behavior. This article aims to combine the two and analyze through behavioral economics how shopping platforms and social media platforms affect consumer psychology and thus consumer behavior in the information age. Summarize existing research results to determine how e-commerce shopping platforms and social media affect consumption outcomes, and explain the reasons from a behavioral economics perspective. Qualitative research is conducted through questionnaire data analysis and literature review. From the perspective of behavioral economics, it is found that most people hold a positive attitude towards personalized recommendation systems, but consumers are more interested in the gap between the recommended products and their psychological expectations and the effects it makes to improve shopping efficiency and protect one's privacy. Therefore, these factors have a significant impact on consumer psychology. In order for e-commerce platforms to increase their revenue, they need to improve in these aspects and establish trust with consumers.

Keywords: personalized recommendation, consumer psychology, purchase intention, behavioral economics

1. Introduction

In the era of digital consumption, consumers' psychology when shopping is more influenced and considered compared to offline shopping. This study aims to analyze representative platform personalized recommendations and combine behavioral economics theory to analyze consumer psychology.

With the digitization of consumption methods, consumers' consumption psychology will also be affected, thereby affecting their final consumption behavior. E-commerce and personalized recommendations on social media in the digital era are two important influencing factors. Therefore, studying how these two factors affect consumers' consumption concepts and behaviors through behavioral economics has theoretical and practical significance.

Existing research: Previous studies have confirmed that social media can quickly spread information, and compared to traditional sales methods, it has a wide range of sales, which increases the convenience of consumption and makes it easier for consumers to find satisfactory products, thereby increasing the purchase rate [1]. For personalized recommendations on e-commerce platforms, it shortens shopping time, improves transaction rates, and shortens shopping cycles. However, there are also issues with recommendations that cannot satisfy users. By analyzing the decision-making process of online consumption through behavioral economics, it can be found that consumers are constantly influenced by subjective psychological factors during the decision-making process, and human psychology largely depends on the impression left by a certain product or platform. At the same time, there are three different aspects that affect user psychology. Ultimately, it will also affect consumption outcomes [2].

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Research significance: Summarize existing research results to determine how e-commerce shopping platforms and social media affect consumption outcomes and explain the reasons from a behavioral economics perspective.

This study is based on [3]. The questionnaire analysis in shows that consumer psychology and behavior are influenced by platform personalized recommendations. Adopting methods such as questionnaire survey and literature research, qualitative analysis, and experience summary.

2. Case Description

After the current transformation of people's shopping methods towards digitalization, shopping has indeed become more convenient and efficient. However, there is also a problem of too many types and quantities of online products, which makes it difficult for consumers to quickly screen products or provide detailed descriptions of the types and functions of products they need, making it difficult to find the desired products. Therefore, many companies (including e-commerce platforms and social media platforms) have begun to seek a personalized recommendation system that can predict consumers' shopping psychology, analyze users' consumption preferences through data such as browsing habits, click through volume, and interests, and actively recommend products to users to improve consumption efficiency.

The principle of personalized recommendation system operation is that if the products that the user has previously consumed or browsed multiple times meet the current search criteria, they will be prioritized for promotion. At the same time, corresponding best-selling products will be randomly pushed to users based on their search and likes on social media platforms, as well as their views and reposts. Secondly, by analyzing the user's previous consumption records, basic information such as age, gender, lifestyle, and living area can be roughly determined, and products can be pushed based on the consumption habits and preferences of similar consumers. For users without purchase records, the system will automatically recommend products with higher sales volume or test their preferences based on search records.

When consumers browse the products pushed by personalized recommendation systems, their psychology also changes. According to a survey on the impact of personalized recommended products on consumers on e-commerce platforms, 4.2% of users believe that personalized recommended products on e-commerce platforms have a significant impact on their choice of online shopping products, while 12.61% of users believe that personalized recommended products on e-commerce platforms often affect their choice of products; 71.43% of users believe that personalized recommended products on e-commerce platforms occasionally affect their choice of online shopping products [4]. Therefore, studying the impact of personalized recommendations on consumer psychology can better optimize and improve the system.

Social media and e-commerce platforms have the following psychological impacts on consumers: (1) Consumers feel novel about new products they see on social media, thereby inducing consumption. (2) Consumers seeing cheap and high-quality products on social media may lead to impulsive consumption. (3) For people who are busy with daily work, the consumption process is relatively complex. Integrating this process into social entertainment can make consumption more convenient and comfortable, enhance consumers' psychological pleasure. (4) Due to the invisible characteristics of online consumption, many consumers may question the safety of online shopping in their hearts, and also increase the risk of information leakage and credit risk, May have a negative impact on consumers' psychology [5].

2.1. Problem Analysis

Based on the survey questionnaire has five options for each question [3], deepening in order of degree, from completely disagree to completely agree, in order to specifically reflect consumer psychology. Due to the fact that the main target audience for online shopping is young people, the survey respondents are mainly concentrated between the ages of 20 and 30. At the same time, select a group that is familiar with e-commerce and can understand the principles of personalized recommendation systems to make the survey results more convincing. The questionnaire designer designed a total of 15 questions, including 11 questions on consumer psychology, in addition to basic information such as age and gender of the respondents. Are they confident in the personalized recommendation content of shopping websites, whether they are confident in the confidentiality of consumer personal information, whether they believe that personalized recommendation infringes privacy, whether the timing of personalized recommendation push is appropriate, whether personalized recommendation appears in the appropriate position during browsing, whether they are tired of personalized recommendation methods, and whether personalized recommendation can improve my efficiency in purchasing suitable products, Can personalized recommendations help me reduce browsing time, whether consumers are willing to purchase products recommended by online shopping platforms, whether consumers have purchased products recommended by online shopping platforms, and whether consumers will continue to use personalized recommendation services on online shopping platforms. By conducting reliability and validity analysis on the questions in the questionnaire, it can be concluded that the reliability of the questionnaire answers is good, and the design of the questionnaire questions is relatively reasonable. Pearson correlation analysis was used in the study to determine the correlation coefficient between the dimension of consumer acceptance intention and the questions in the questionnaire (Table 1).

Table 1: Consumer acceptance willingness correlation coefficient.

	Consumer acceptance willingness correlation coefficient
Whether you are assured of the personalized recommendation content of the shopping website	0.435
whether you are assured of the confidentiality of the shopping website's personal information of consumers	0.230
whether the timing of personalized recommendation is appropriate	0.274
whether the position of personalized recommendation appears when browsing	0.333
whether you will be bored with the way of personalized recommendation	0.211
whether personalized recommendation can improve the efficiency of my purchase of suitable goods	0.516
Whether personalized recommendation can help me reduce browsing time	0.356

From the chart, it can be seen that all correlation coefficients are greater than 0, so they are all positively correlated. Among them, the personalized recommendation system has the greatest impact on improving online shopping efficiency. The other factors, from high to low, are consumers' trust in recommended content, saving browsing time, the location and time of personalized push, the confidentiality of personal information, and the way of recommendation. Therefore, it can confirm the above-mentioned factors that affect consumer psychology. Therefore, the primary role and future improvement goals of personalized recommendation systems are to improve user shopping efficiency, shorten the shopping cycle, and enable users to find the desired products faster and more accurately. At the same time, social media marketing interactivity and online reputation have a significant positive impact on the three different dimensions of user participation: consumer participation, contribution participation, and creative participation, therefore recommending merchants with closer proximity and better consumer experience to users based on their region can enhance consumer satisfaction with the platform [6]. Secondly, it is necessary to improve the accuracy and richness of push notifications, enhance users' shopping experience, and avoid the problem of personalized recommended product quality not meeting consumers' expectations as much as possible. Additionally, personalized push notifications should be arranged in a reasonable manner, without affecting consumers' sensory experience, thereby avoiding a decrease in consumers' trust in the system and feelings of rejection or disgust. Therefore, it is necessary to improve the access system of e-commerce platforms, or increase consumer desire by recommending complementary products, improve product transaction rates, and enhance the ability of shopping websites to cross sell [7]. Due to consumers' great concern about the security of e-commerce platforms, it is important to improve their security. Personalized recommendation systems require the use of basic information such as consumers' previous purchases, search records, content preferences, gender, age, and region, Therefore, there is a possibility of leaking consumer personal information. If the security of e-commerce platforms can be improved, it can address consumer concerns and enhance consumer trust [4].

2.2. Suggestions

According to the reference dependency theory of behavioral economics, the psychological satisfaction that consumers obtain when shopping not only depends on purchasing the appropriate

product, but also on the gap between the perceived and purchased product and their psychological expectations. This is because when the same choice is expressed in different ways, consumers' psychology is affected, leading them to make some irrational decisions [8]. Therefore, the closer the products recommended by personalized recommendation systems are to consumers' psychological expectations, the more likely consumers are to choose related products. This also confirms the necessity of personalized recommendation systems to improve the accuracy of pushed products. In the process of consumption, consumers usually face a psychological game process of immediate consumption or delayed consumption, which is also a self-control behavior in behavioral economics. The former can satisfy consumers' desire for consumption, while the latter may arise due to the price risks they bear in the future, partly due to consumers' anchoring psychology, which refers to people using specific numerical values and habits as psychological reference values to refer to things [9]. For example, when a product is discounted, merchants will write the original product price next to it to reflect the degree of discount. At this time, the original product price becomes an anchor point and serves as a reference value for customers [10]. For those who are more frugal, their risk aversion awareness is strong, and they have a pessimistic mentality towards the future price trend of goods. Therefore, they may make decisions to postpone consumption. This situation usually occurs when the products that consumers are concerned about are not just in need. Therefore, personalized recommendation systems need to recommend products to consumers that are attractive in terms of quality, price, reputation, and other aspects, increase consumers' desire to consume.

In the era of digital consumption, consumers only engage in consumption activities after experiencing three stages of psychological activity: determining demand, learning before shopping, and comparing similar products [11]. Personalized recommendation systems need to play a role in all three aspects to maximize consumer satisfaction and find suitable products for consumers. At the same time, in order to enhance consumers' willingness to purchase, it is necessary to improve the reliability of personalized recommendation systems and gain user trust. This requires personalized recommendation systems to improve information reliability, information arrangement, push timing, push intensity, and other aspects. It is also possible to more accurately improve the recommendation system by actively asking consumers if they are interested in this type of product under the recommended product, reducing inefficiency, Recommend more interesting content to users. Finally, it is necessary to enhance the platform's information security and after-sales service level to enhance the image of the entire platform in the minds of consumers. In the era of big data, consumers' basic information and behavior will be systematically recorded and analyzed. Therefore, protecting consumers' personal privacy during the shopping process can enhance consumers' sense of security.

3. Conclusion

This article is based on the working principle and effectiveness of personalized recommendation systems on e-commerce platforms, and conducts in-depth research on people's psychological and behavioral changes and their influencing factors during online shopping. Qualitative research is conducted through questionnaire data analysis and literature review. From the perspective of behavioral economics, it is found that most people hold a positive attitude towards personalized recommendation systems, but consumers are more interested in the gap between the recommended products and their psychological expectations, Can it improve shopping efficiency and protect one's privacy. Therefore, these factors have a significant impact on consumer psychology. In order for e-commerce platforms to increase their revenue, they need to improve in these aspects and establish trust with consumers. We hope the audience find the information in this template useful in the preparation of your submission.

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